ANALYSIS DATA

Analysis Type	Simulation	
Measurement system	Metric	
Dispatcher Algorithm	Group Collective	Traffic mode: Normal
Time slice between simulation calculations (s)	0.10	
No of time slices between screen updates	10	
No of simulations to run for each configuration	10	
Random number seed for passenger generator	1	
Energy Model	Off	

BUILDING DATA

Floor Name	Floor Level (m)	No of people	Area (m²)	Area/person	Entrance Floor
Lower Ground	3.20	0	-	-	Yes
Ground	10.10	0	-	-	Yes
Mezz	15.10				
Level 1	19.90				
Level 2	22.70				
Level 3	25.50				
Level 4	28.30				
Level 5	31.10				
Level 6	33.90				
Level 7	36.70				
Level 8	39.50				
Level 9	42.30				
Level 10	45.10				
Level 11	47.90				
Level 12	50.70				
Level 14	53.50				
Level 15	56.30				
Level 16	59.10				
Level 17	62.70	58	700.0	12.0	No
Level 18	66.30	58	700.0	12.0	No
Level 19	69.90	58	700.0	12.0	No
Level 20	73.50	58	700.0	12.0	No
Level 21	77.10	58	700.0	12.0	No
Level 22	80.70	58	700.0	12.0	No
Level 23	84.30	58	700.0	12.0	No
Level 24	88.25	58	700.0	12.0	No
Level 25	91.85	58	700.0	12.0	No

Express Zone	
Lowest floor not served by elevators	Mezz
Highest floor not served by elevators	Level 16

Absenteeism (%)	0.00

ELEVATOR DATA

	Car 1	Car 2	Car 3
Capacity (kg)	1275	1275	1275
Floor area (m²)	2.90	2.90	2.90
Door Pre-opening Time (s)	0.00	0.00	0.00
Door Open Time (s)	1.50	1.50	1.50
Door Close Time (s)	2.50	2.50	2.50
Home Door Dwell 1 (s)	3.00	3.00	3.00
Home Door Dwell 2 (s)	2.00	2.00	2.00
Door Dwell 1 (s)	3.00	3.00	3.00
Door Dwell 2 (s)	2.00	2.00	2.00
Speed (m/s)	3.50	3.50	3.50
Acceleration (m/s²)	1.00	1.00	1.00
Jerk (m/s³)	1.50	1.50	1.50
Start Delay (s)	0.50	0.50	0.50
Levelling Delay (s)	0.00	0.00	0.00
Home Floor	Ground	Ground	Ground
Shut down time (s)	0.00	0.00	0.00
Restart time (s)	0.00	0.00	0.00
Service	Auto	Auto	Auto

Floors served	Car 1	Car 2	Car 3
Lower Ground	Yes	No	No
Ground	Yes	Yes	Yes
Mezz	Yes	Yes	Yes
Level 1	Yes	Yes	Yes
Level 2	Yes	Yes	Yes
Level 3	Yes	Yes	Yes
Level 4	Yes	Yes	Yes
Level 5	Yes	Yes	Yes
Level 6	Yes	Yes	Yes
Level 7	Yes	Yes	Yes
Level 8	Yes	Yes	Yes
Level 9	Yes	Yes	Yes
Level 10	Yes	Yes	Yes
Level 11	Yes	Yes	Yes
Level 12	Yes	Yes	Yes
Level 14	Yes	Yes	Yes
Level 15	Yes	Yes	Yes
Level 16	Yes	Yes	Yes
Level 17	Yes	Yes	Yes
Level 18	Yes	Yes	Yes
Level 19	Yes	Yes	Yes
Level 20	Yes	Yes	Yes
Level 21	Yes	Yes	Yes
Level 22	Yes	Yes	Yes
Level 23	Yes	Yes	Yes
Level 24	Yes	Yes	Yes
Level 25	Yes	Yes	Yes

PASSENGER DATA

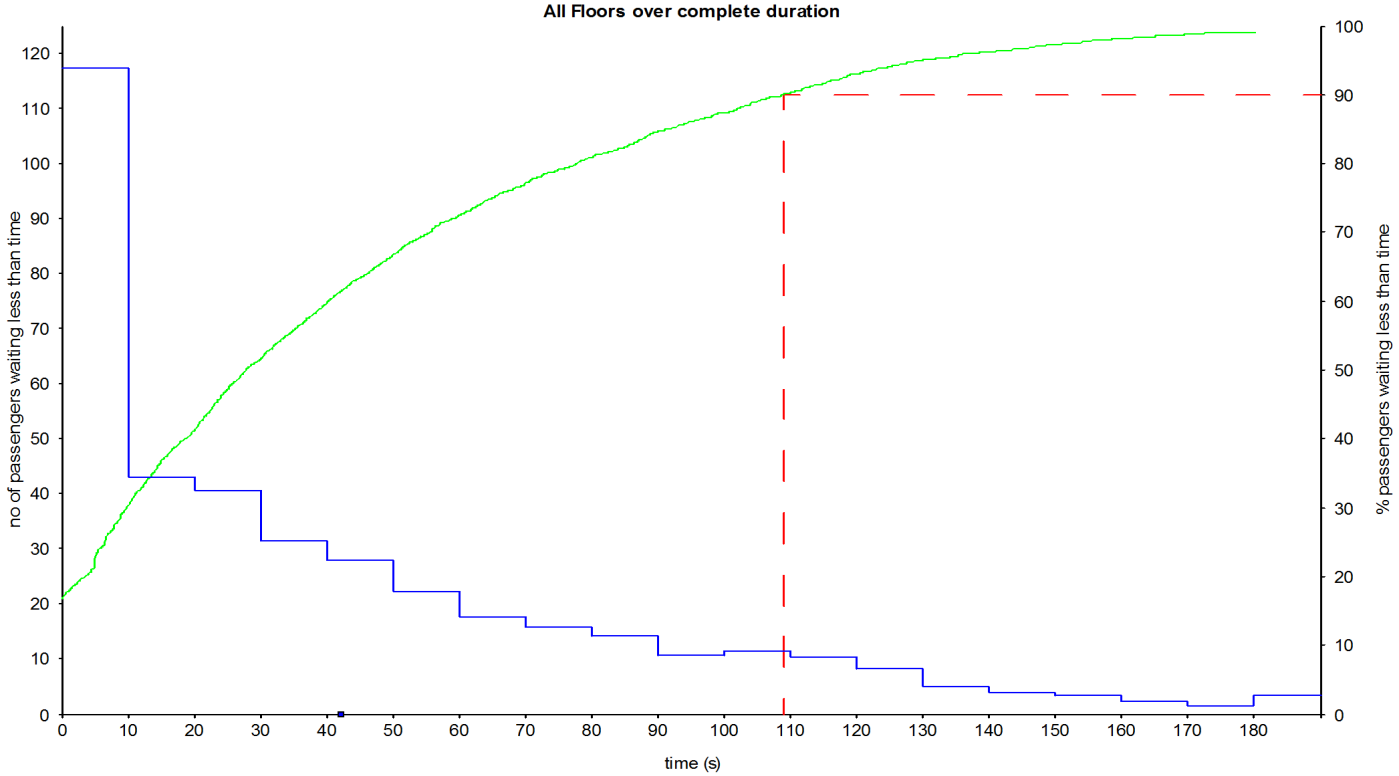
Arrangement	Conventional for Single Deck elevators
Template	Barney Lunch peak (1 hour)
Demand (% pop per 5 mins)	11.00
Passenger Mass (kg)	75
Passenger Area (m^2)	0.21
Loading Time (s)	1.20
Unloading Time (s)	1.20
Stair Factor (%)	0.00
Capacity Factor by Mass (%)	80.00
Capacity Factor by Area (%)	100.00

Floor Name	Entrance Bias
Lower Ground	3.00
Ground	97.00

Average of all runs

Distribution of Passenger Waiting Times

All Floors over complete duration

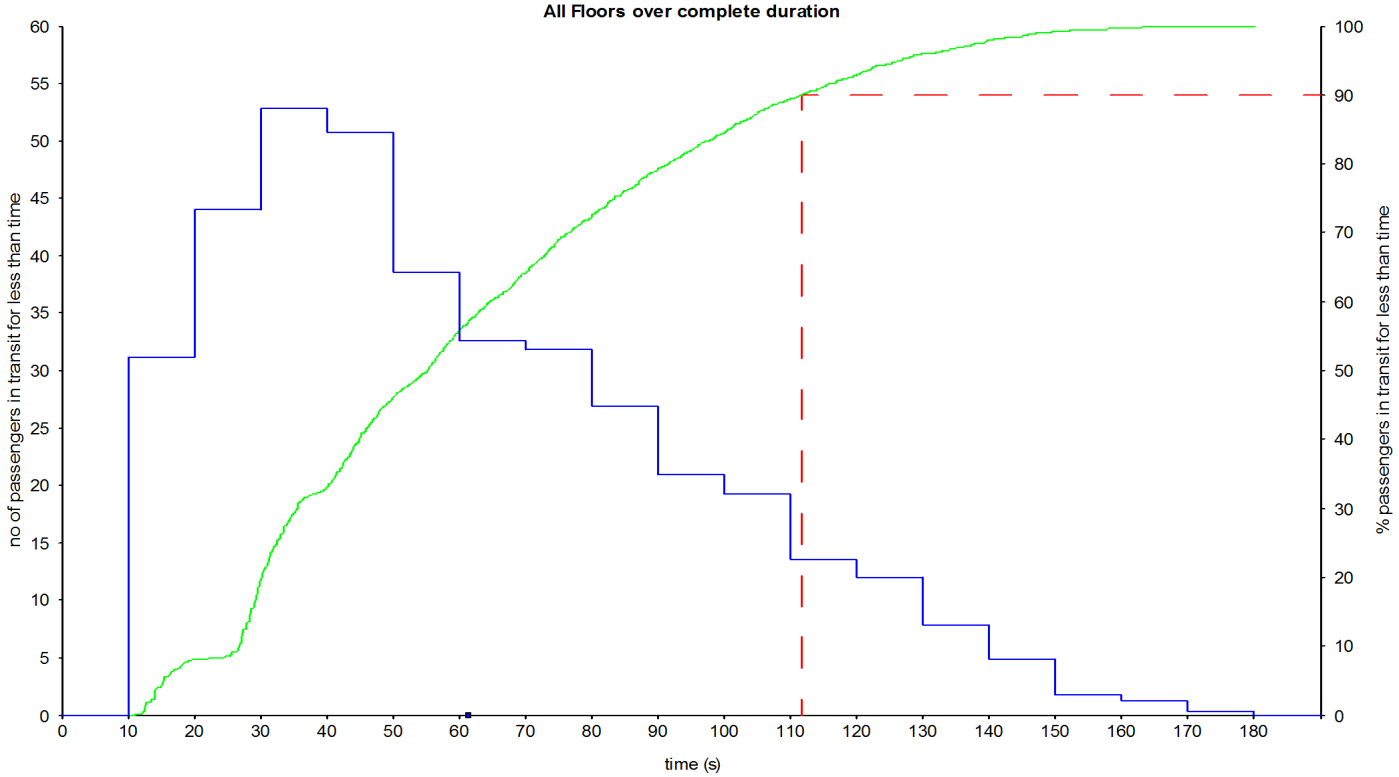


Average Waiting Time (s) 42.4 (+7.6/-4.3)
Longest Waiting Time (s) 223.7 (+94.6/-47.6)

Average of all runs

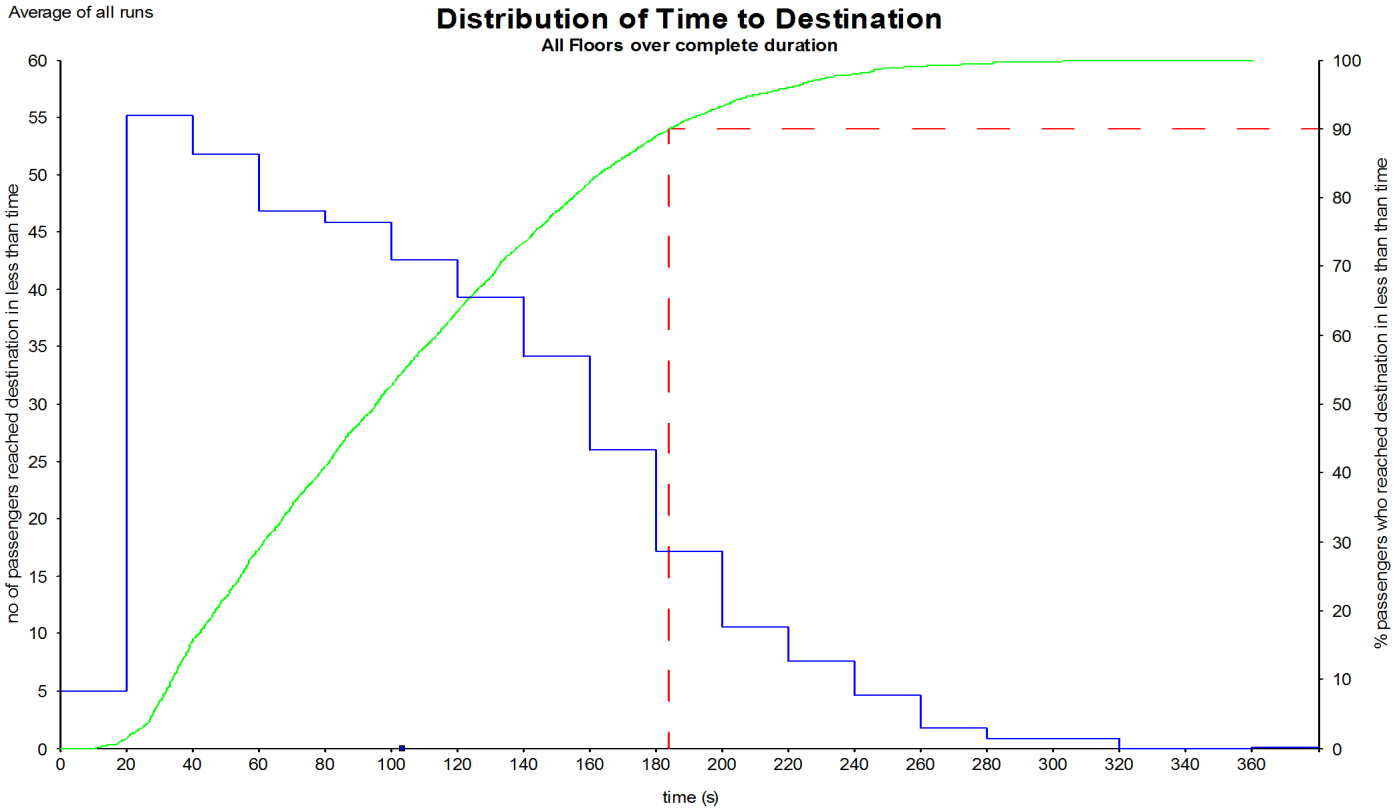
Distribution of Passenger Transit Times

All Floors over complete duration



Average Transit Time (s) 61.4 (+5.6/-4.1)
Longest Transit Time (s) 163.1 (+10.1/-13.9)

Average of all runs



Average Time To Destination (s) 103.8 (+9.1/-4.4)
Longest Time to Destination (s) 302.0 (+82.3/-55.2)

ANALYSIS DATA

Analysis Type	Simulation	
Measurement system	Metric	
Dispatcher Algorithm	Group Collective	Traffic mode: Normal
Time slice between simulation calculations (s)	0.10	
No of time slices between screen updates	10	
No of simulations to run for each configuration	10	
Random number seed for passenger generator	1	
Energy Model	Off	

BUILDING DATA

Floor Name	Floor Level (m)	No of people	Area (m²)	Area/person	Entrance Floor
Lower Ground	3.20	0	-	-	Yes
Ground	10.10	0	-	-	Yes
Mezz	15.10				
Level 1	19.90				
Level 2	22.70				
Level 3	25.50				
Level 4	28.30				
Level 5	31.10				
Level 6	33.90				
Level 7	36.70				
Level 8	39.50				
Level 9	42.30				
Level 10	45.10				
Level 11	47.90				
Level 12	50.70				
Level 14	53.50				
Level 15	56.30				
Level 16	59.10				
Level 17	62.70	58	700.0	12.0	No
Level 18	66.30	58	700.0	12.0	No
Level 19	69.90	58	700.0	12.0	No
Level 20	73.50	58	700.0	12.0	No
Level 21	77.10	58	700.0	12.0	No
Level 22	80.70	58	700.0	12.0	No
Level 23	84.30	58	700.0	12.0	No
Level 24	88.25	58	700.0	12.0	No
Level 25	91.85	58	700.0	12.0	No

Express Zone	
Lowest floor not served by elevators	Mezz
Highest floor not served by elevators	Level 16
Absenteeism (%)	0.00

ELEVATOR DATA

	Car 1	Car 2	Car 3
Capacity (kg)	1275	1275	1275
Floor area (m²)	2.90	2.90	2.90
Door Pre-opening Time (s)	0.00	0.00	0.00
Door Open Time (s)	1.50	1.50	1.50
Door Close Time (s)	2.50	2.50	2.50
Home Door Dwell 1 (s)	3.00	3.00	3.00
Home Door Dwell 2 (s)	2.00	2.00	2.00
Door Dwell 1 (s)	3.00	3.00	3.00
Door Dwell 2 (s)	2.00	2.00	2.00
Speed (m/s)	3.50	3.50	3.50
Acceleration (m/s²)	1.00	1.00	1.00
Jerk (m/s³)	1.50	1.50	1.50
Start Delay (s)	0.50	0.50	0.50
Levelling Delay (s)	0.00	0.00	0.00
Home Floor	Ground	Ground	Ground
Shut down time (s)	0.00	0.00	0.00
Restart time (s)	0.00	0.00	0.00
Service	Auto	Auto	Auto

Floors served	Car 1	Car 2	Car 3
Lower Ground	Yes	No	No
Ground	Yes	Yes	Yes
Mezz	Yes	Yes	Yes
Level 1	Yes	Yes	Yes
Level 2	Yes	Yes	Yes
Level 3	Yes	Yes	Yes
Level 4	Yes	Yes	Yes
Level 5	Yes	Yes	Yes
Level 6	Yes	Yes	Yes
Level 7	Yes	Yes	Yes
Level 8	Yes	Yes	Yes
Level 9	Yes	Yes	Yes
Level 10	Yes	Yes	Yes
Level 11	Yes	Yes	Yes
Level 12	Yes	Yes	Yes
Level 14	Yes	Yes	Yes
Level 15	Yes	Yes	Yes
Level 16	Yes	Yes	Yes
Level 17	Yes	Yes	Yes
Level 18	Yes	Yes	Yes
Level 19	Yes	Yes	Yes
Level 20	Yes	Yes	Yes
Level 21	Yes	Yes	Yes
Level 22	Yes	Yes	Yes
Level 23	Yes	Yes	Yes
Level 24	Yes	Yes	Yes
Level 25	Yes	Yes	Yes

PASSENGER DATA

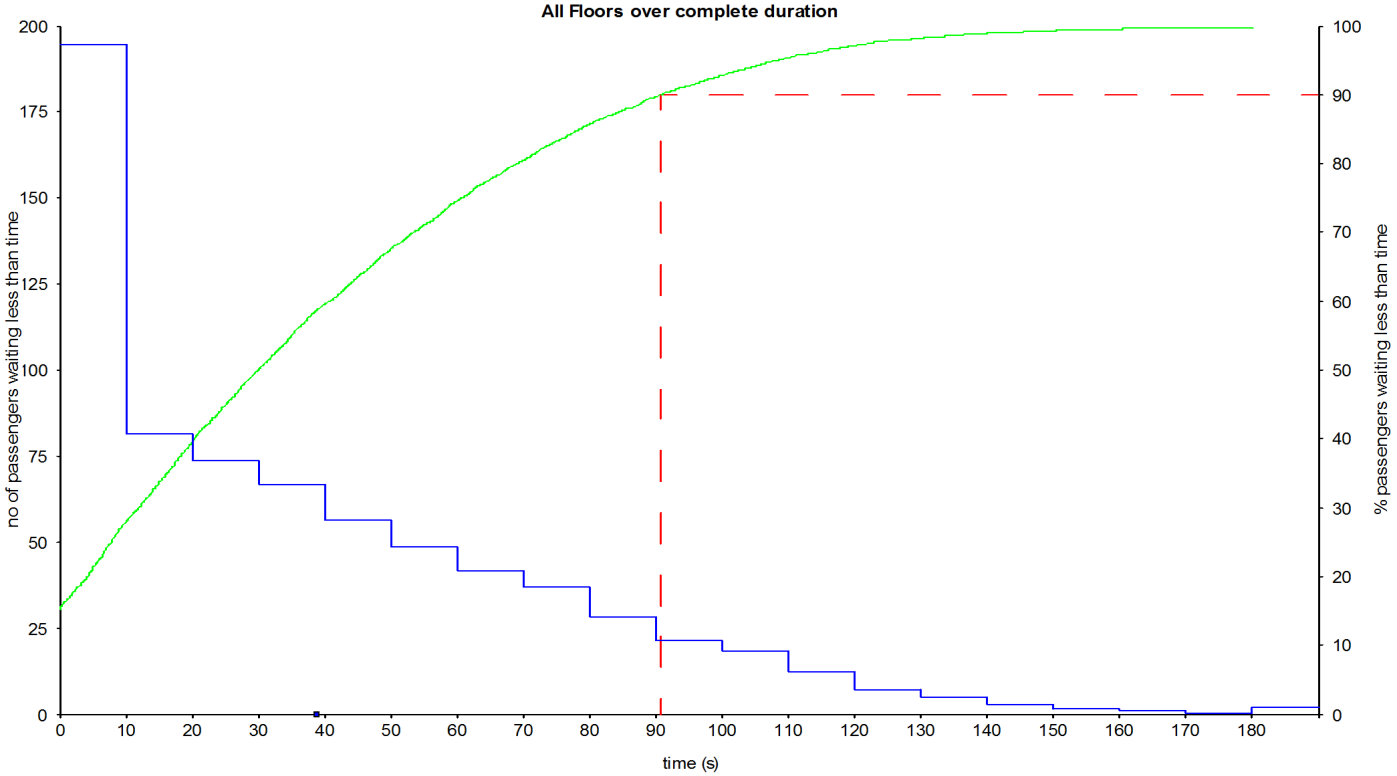
Arrangement	Conventional for Single Deck elevators
Template	Peters Research (CIBSE) modern office lunch peak
Passenger Mass (kg)	75
Passenger Area (m^2)	0.21
Loading Time (s)	1.20
Unloading Time (s)	1.20
Stair Factor (%)	0.00
Capacity Factor by Mass (%)	80.00
Capacity Factor by Area (%)	100.00

Floor Name	Entrance Bias
Lower Ground	3.00
Ground	97.00

Average of all runs

Distribution of Passenger Waiting Times

All Floors over complete duration

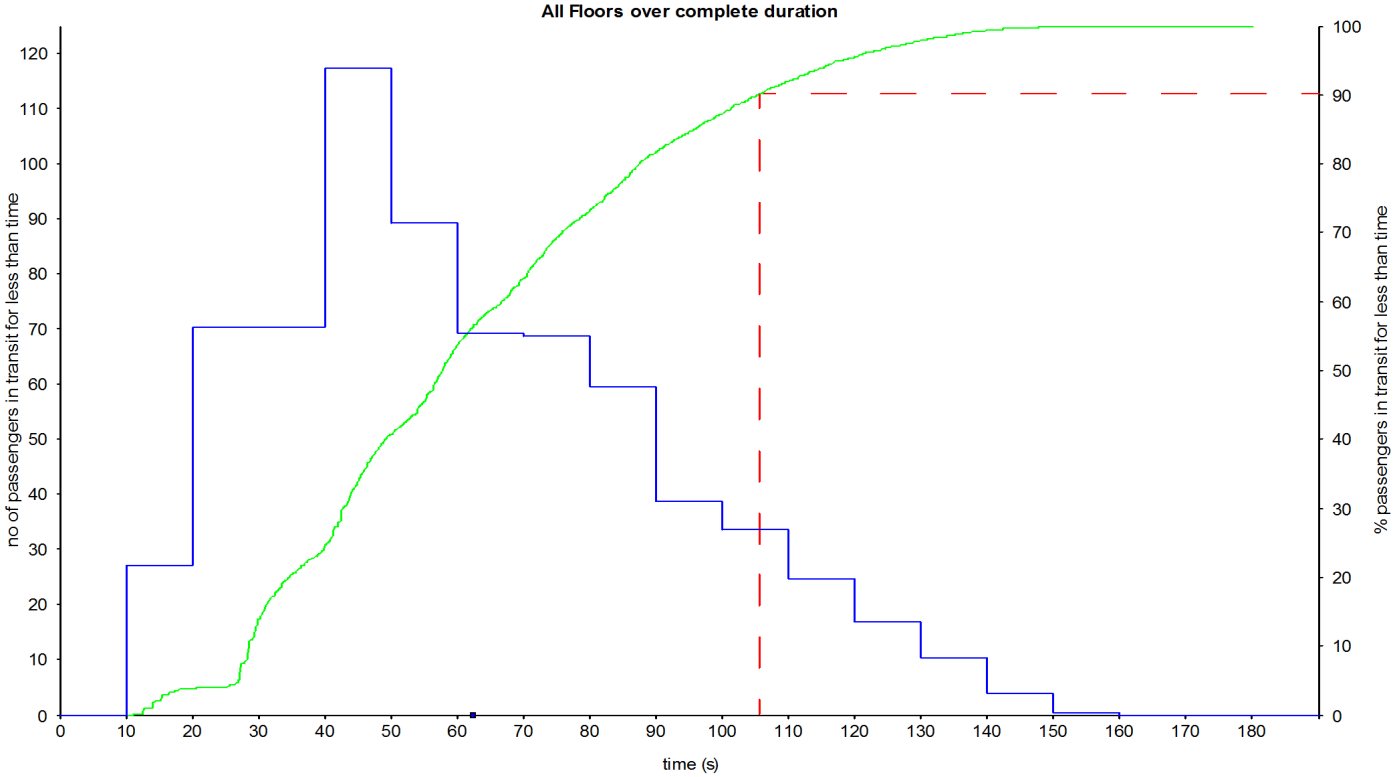


Average Waiting Time (s) 38.8 (+3.5/-5.1)
Longest Waiting Time (s) 211.9 (+90.6/-59.3)

Average of all runs

Distribution of Passenger Transit Times

All Floors over complete duration

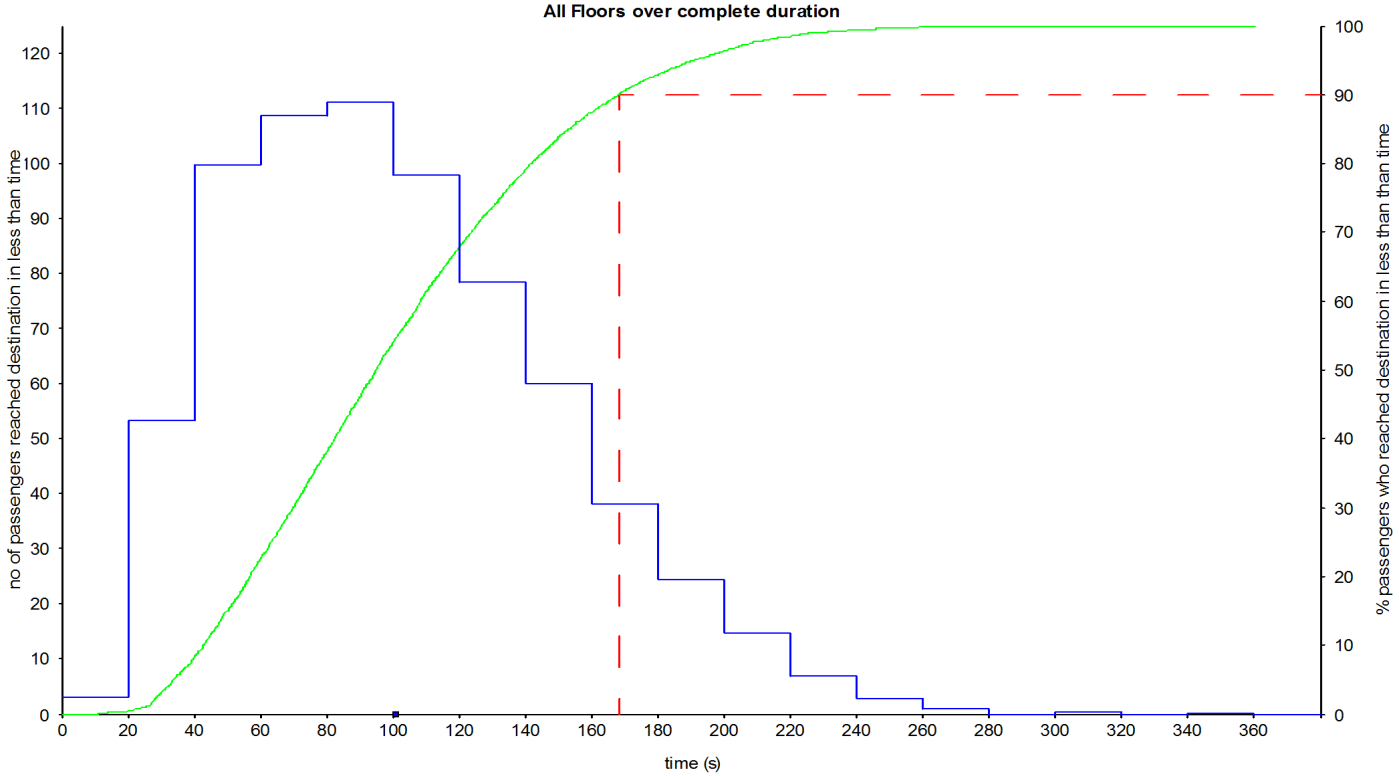


Average Transit Time (s) 62.5 (+2.9/-2.0)
Longest Transit Time (s) 148.3 (+9.5/-11.5)

Average of all runs

Distribution of Time to Destination

All Floors over complete duration



Average Time To Destination (s) 101.3 (+3.0/-5.8)
Longest Time to Destination (s) 278.6 (+70.4/-34.5)

ANALYSIS DATA

Analysis Type	Simulation
Measurement system	Metric
Dispatcher Algorithm	Destination Control (ACA)
Cost Function	Minimum journey time
Reduction in number of stops penalty	0.0
Allow allocations allowing doors to re-open	Yes
Time slice between simulation calculations (s)	0.10
No of time slices between screen updates	10
No of simulations to run for each configuration	10
Random number seed for passenger generator	1
Energy Model	Off

BUILDING DATA

Floor Name	Floor Level (m)	No of people	Area (m²)	Area/person	Entrance Floor
Lower Ground	3.20	0	-	-	Yes
Ground	10.10	0	-	-	Yes
Mezz	15.10				
Level 1	19.90				
Level 2	22.70				
Level 3	25.50				
Level 4	28.30				
Level 5	31.10				
Level 6	33.90				
Level 7	36.70				
Level 8	39.50				
Level 9	42.30				
Level 10	45.10				
Level 11	47.90				
Level 12	50.70				
Level 14	53.50				
Level 15	56.30				
Level 16	59.10	0	-	-	No
Level 17	62.70	58	700.0	12.0	No
Level 18	66.30	58	700.0	12.0	No
Level 19	69.90	58	700.0	12.0	No
Level 20	73.50	58	700.0	12.0	No
Level 21	77.10	58	700.0	12.0	No
Level 22	80.70	58	700.0	12.0	No
Level 23	84.30	58	700.0	12.0	No
Plant	88.25	0	-	-	No

Express Zone
Lowest floor not served by elevators Mezz
Highest floor not served by elevators Level 15

Absenteeism (%) 0.00

ELEVATOR DATA

	Car 1	Car 2	Car 3
Capacity (kg)	1275	1275	1275
Floor area (m²)	2.90	2.90	2.90
Door Pre-opening Time (s)	0.00	0.00	0.00
Door Open Time (s)	1.80	1.80	1.80
Door Close Time (s)	2.90	2.90	2.90
Home Door Dwell 1 (s)	3.00	3.00	3.00
Home Door Dwell 2 (s)	2.00	2.00	2.00
Door Dwell 1 (s)	3.00	3.00	3.00
Door Dwell 2 (s)	2.00	2.00	2.00
Speed (m/s)	3.50	3.50	3.50
Acceleration (m/s²)	1.00	1.00	1.00
Jerk (m/s³)	1.60	1.60	1.60
Start Delay (s)	0.50	0.50	0.50
Levelling Delay (s)	0.00	0.00	0.00
Home Floor	Ground	Ground	Ground
Shut down time (s)	0.00	0.00	0.00
Restart time (s)	0.00	0.00	0.00
Service	Auto	Auto	Auto

Floors served	Car 1	Car 2	Car 3
Lower Ground	Yes	Yes	Yes
Ground	Yes	Yes	Yes
Mezz	Yes	Yes	Yes
Level 1	Yes	Yes	Yes
Level 2	Yes	Yes	Yes
Level 3	Yes	Yes	Yes
Level 4	Yes	Yes	Yes
Level 5	Yes	Yes	Yes
Level 6	Yes	Yes	Yes
Level 7	Yes	Yes	Yes
Level 8	Yes	Yes	Yes
Level 9	Yes	Yes	Yes
Level 10	Yes	Yes	Yes
Level 11	Yes	Yes	Yes
Level 12	Yes	Yes	Yes
Level 14	Yes	Yes	Yes
Level 15	Yes	Yes	Yes
Level 16	Yes	Yes	Yes
Level 17	Yes	Yes	Yes
Level 18	Yes	Yes	Yes
Level 19	Yes	Yes	Yes
Level 20	Yes	Yes	Yes
Level 21	Yes	Yes	Yes
Level 22	Yes	Yes	Yes
Level 23	Yes	Yes	Yes
Plant	Yes	Yes	Yes

PASSENGER DATA

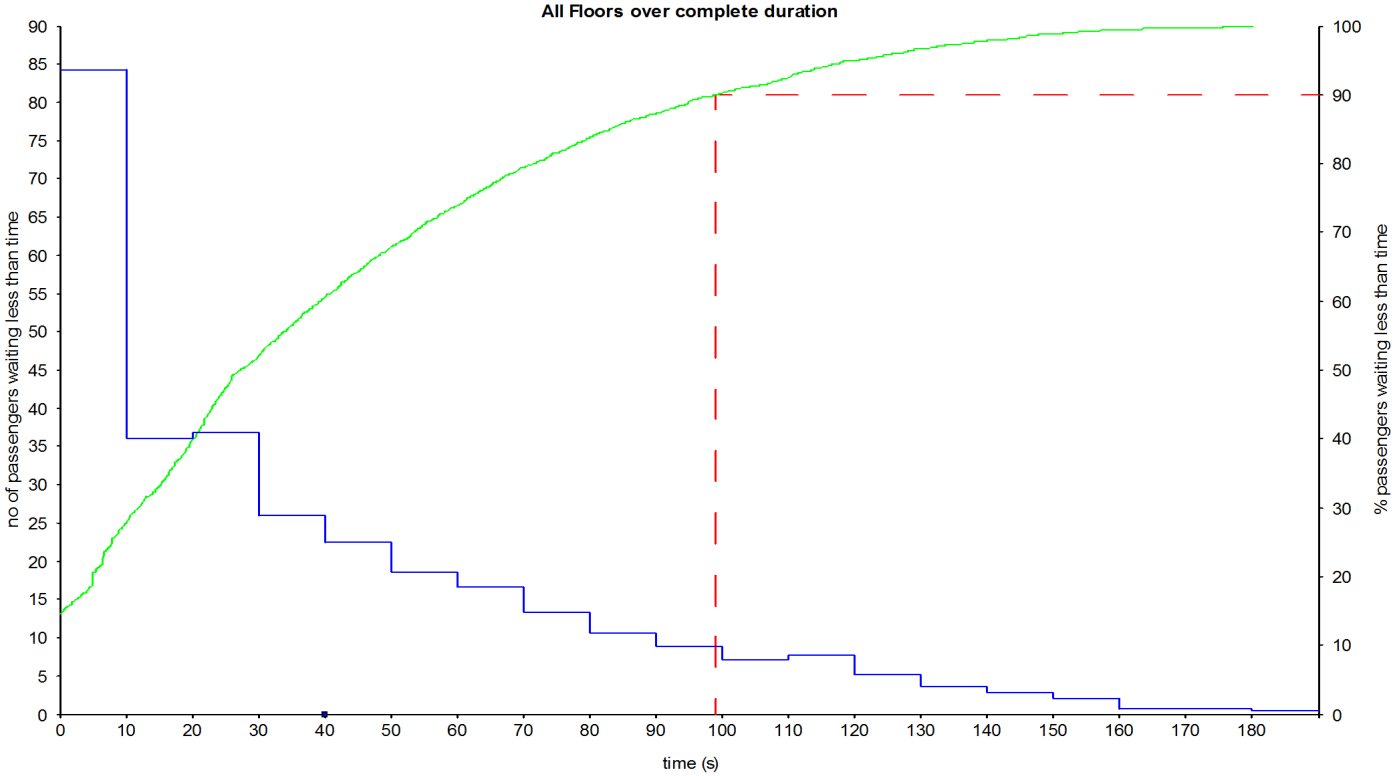
Arrangement	Conventional for Single Deck elevators
Template	Barney Lunch peak (1 hour)
Demand (% pop per 5 mins)	11.00
Passenger Mass (kg)	75
Passenger Area (m^2)	0.21
Loading Time (s)	1.20
Unloading Time (s)	1.20
Stair Factor (%)	0.00
Capacity Factor by Mass (%)	80.00
Capacity Factor by Area (%)	80.00

Floor Name	Entrance Bias
Lower Ground	3.00
Ground	97.00

Average of all runs

Distribution of Passenger Waiting Times

All Floors over complete duration

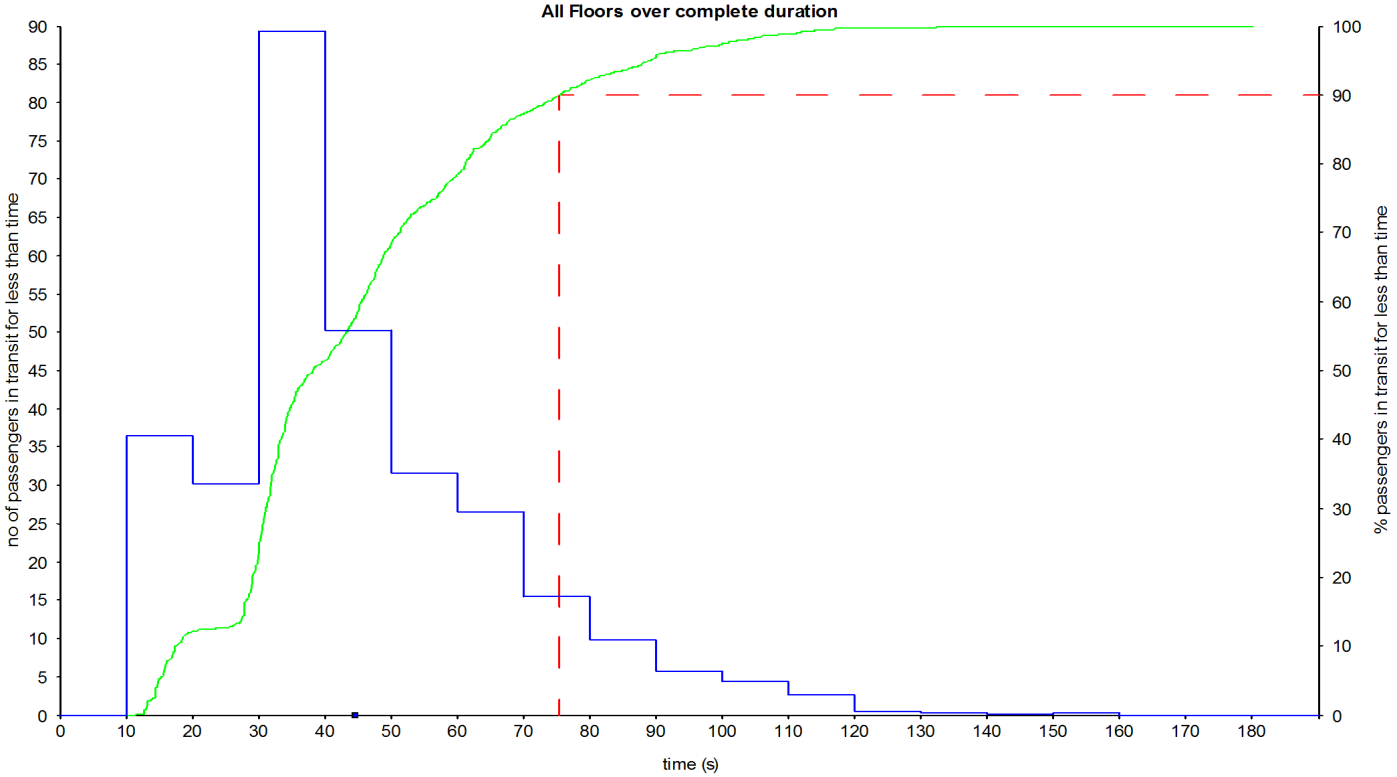


Average Waiting Time (s) 40.1 (+5.1/-7.4)
Longest Waiting Time (s) 177.0 (+22.8/-30.9)

Average of all runs

Distribution of Passenger Transit Times

All Floors over complete duration

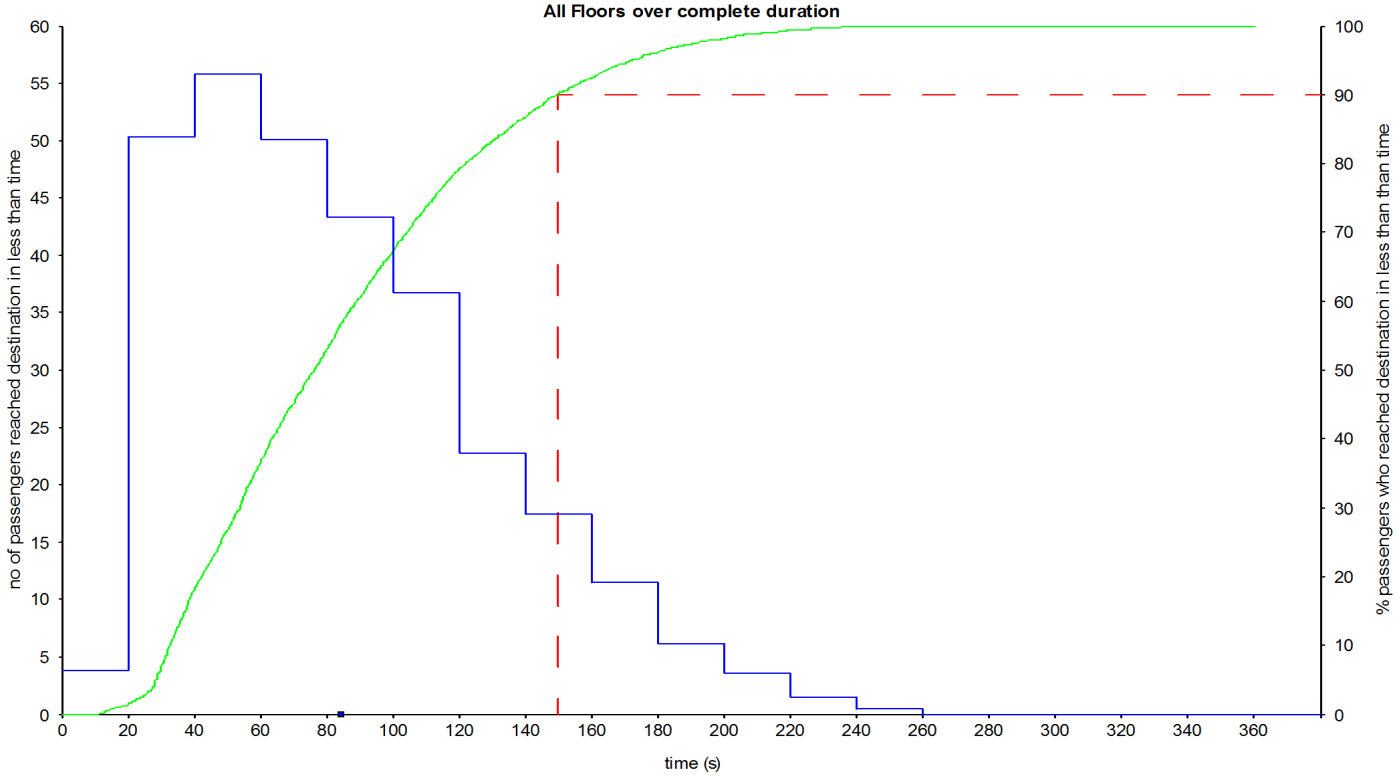


Average Transit Time (s) 44.6 (+1.7/-1.2)
Longest Transit Time (s) 124.3 (+33.7/-24.9)

Average of all runs

Distribution of Time to Destination

All Floors over complete duration



Average Time To Destination (s) 84.7 (+4.9/-5.7)
Longest Time to Destination (s) 231.4 (+26.3/-17.7)

ANALYSIS DATA

Analysis Type	Simulation
Measurement system	Metric
Dispatcher Algorithm	Destination Control (ACA)
Cost Function	Minimum journey time
Reduction in number of stops penalty	0.0
Allow allocations allowing doors to re-open	Yes
Time slice between simulation calculations (s)	0.10
No of time slices between screen updates	10
No of simulations to run for each configuration	10
Random number seed for passenger generator	1
Energy Model	Off

BUILDING DATA

Floor Name	Floor Level (m)	No of people	Area (m²)	Area/person	Entrance Floor
Lower Ground	3.20	0	-	-	Yes
Ground	10.10	0	-	-	Yes
Mezz	15.10				
Level 1	19.90				
Level 2	22.70				
Level 3	25.50				
Level 4	28.30				
Level 5	31.10				
Level 6	33.90				
Level 7	36.70				
Level 8	39.50				
Level 9	42.30				
Level 10	45.10				
Level 11	47.90				
Level 12	50.70				
Level 14	53.50				
Level 15	56.30				
Level 16	59.10	0	-	-	No
Level 17	62.70	58	700.0	12.0	No
Level 18	66.30	58	700.0	12.0	No
Level 19	69.90	58	700.0	12.0	No
Level 20	73.50	58	700.0	12.0	No
Level 21	77.10	58	700.0	12.0	No
Level 22	80.70	58	700.0	12.0	No
Level 23	84.30	58	700.0	12.0	No
Plant	88.25	0	-	-	No

Express Zone
Lowest floor not served by elevators Mezz
Highest floor not served by elevators Level 15

Absenteeism (%) 0.00

ELEVATOR DATA

	Car 1	Car 2	Car 3
Capacity (kg)	1275	1275	1275
Floor area (m²)	2.90	2.90	2.90
Door Pre-opening Time (s)	0.00	0.00	0.00
Door Open Time (s)	1.80	1.80	1.80
Door Close Time (s)	2.90	2.90	2.90
Home Door Dwell 1 (s)	3.00	3.00	3.00
Home Door Dwell 2 (s)	2.00	2.00	2.00
Door Dwell 1 (s)	3.00	3.00	3.00
Door Dwell 2 (s)	2.00	2.00	2.00
Speed (m/s)	3.50	3.50	3.50
Acceleration (m/s²)	1.00	1.00	1.00
Jerk (m/s³)	1.60	1.60	1.60
Start Delay (s)	0.50	0.50	0.50
Levelling Delay (s)	0.00	0.00	0.00
Home Floor	Ground	Ground	Ground
Shut down time (s)	0.00	0.00	0.00
Restart time (s)	0.00	0.00	0.00
Service	Auto	Auto	Auto

Floors served	Car 1	Car 2	Car 3
Lower Ground	Yes	Yes	Yes
Ground	Yes	Yes	Yes
Mezz	Yes	Yes	Yes
Level 1	Yes	Yes	Yes
Level 2	Yes	Yes	Yes
Level 3	Yes	Yes	Yes
Level 4	Yes	Yes	Yes
Level 5	Yes	Yes	Yes
Level 6	Yes	Yes	Yes
Level 7	Yes	Yes	Yes
Level 8	Yes	Yes	Yes
Level 9	Yes	Yes	Yes
Level 10	Yes	Yes	Yes
Level 11	Yes	Yes	Yes
Level 12	Yes	Yes	Yes
Level 14	Yes	Yes	Yes
Level 15	Yes	Yes	Yes
Level 16	Yes	Yes	Yes
Level 17	Yes	Yes	Yes
Level 18	Yes	Yes	Yes
Level 19	Yes	Yes	Yes
Level 20	Yes	Yes	Yes
Level 21	Yes	Yes	Yes
Level 22	Yes	Yes	Yes
Level 23	Yes	Yes	Yes
Plant	Yes	Yes	Yes

PASSENGER DATA

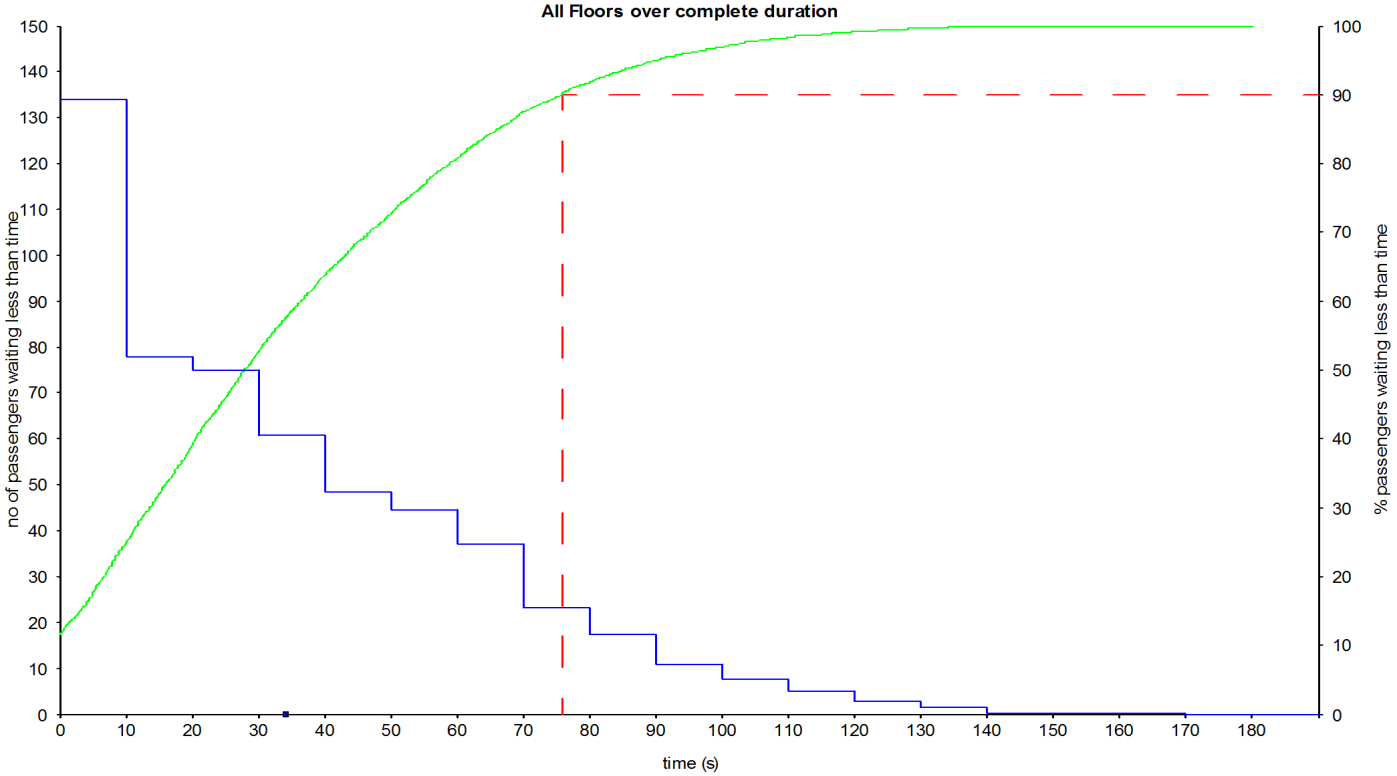
Arrangement	Conventional for Single Deck elevators
Template	Peters Research (CIBSE) modern office lunch peak
Passenger Mass (kg)	75
Passenger Area (m²)	0.21
Loading Time (s)	1.20
Unloading Time (s)	1.20
Stair Factor (%)	0.00
Capacity Factor by Mass (%)	80.00
Capacity Factor by Area (%)	80.00

Floor Name	Entrance Bias
Lower Ground	3.00
Ground	97.00

Average of all runs

Distribution of Passenger Waiting Times

All Floors over complete duration

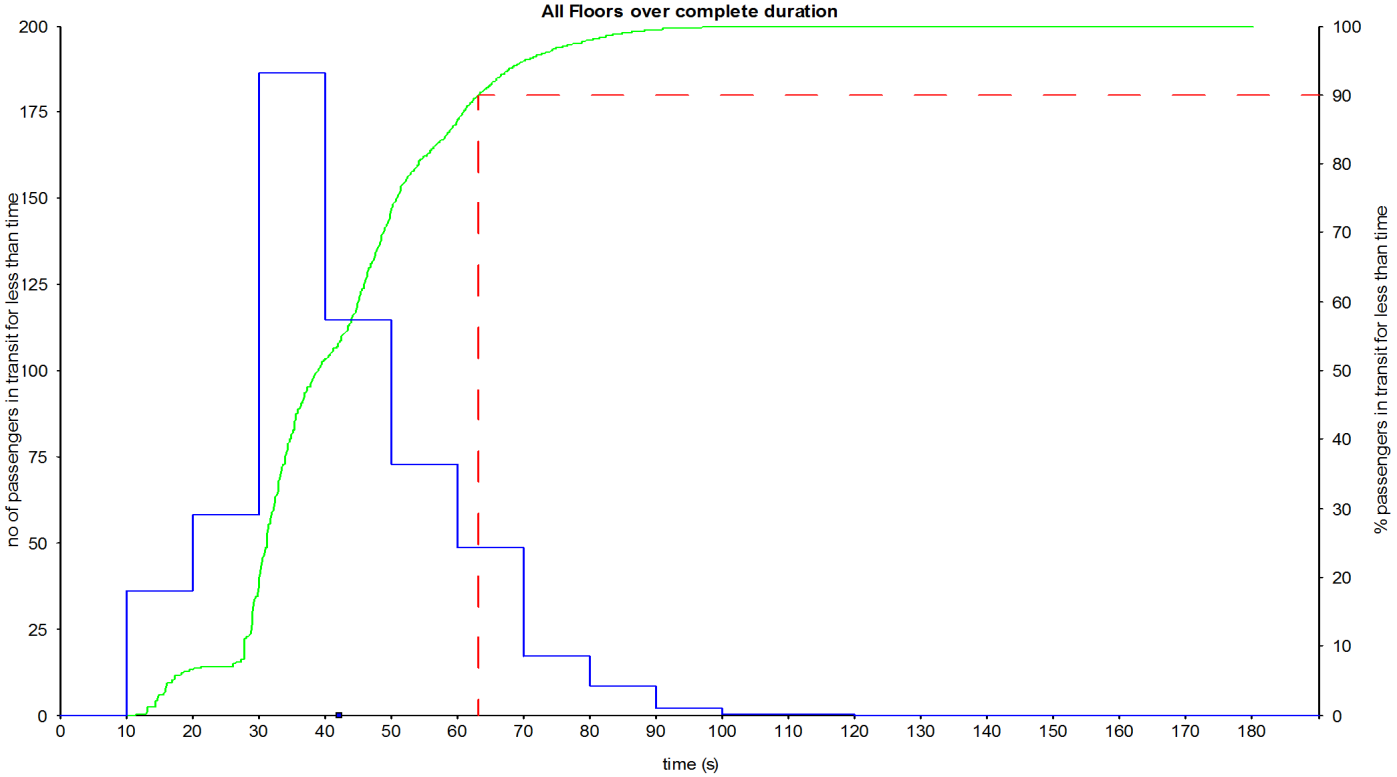


Average Waiting Time (s) 34.2 (+3.5/-4.8)
Longest Waiting Time (s) 146.6 (+20.3/-12.4)

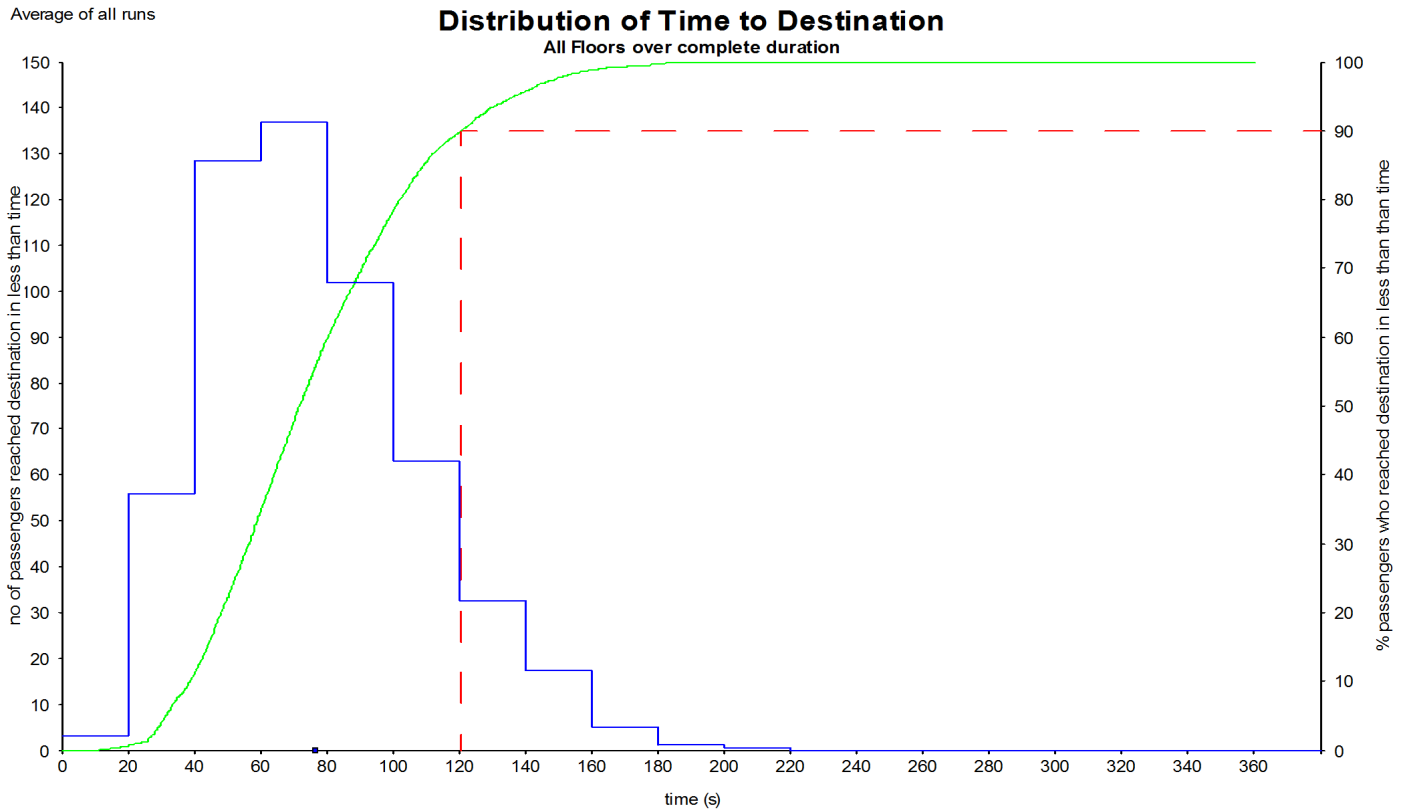
Average of all runs

Distribution of Passenger Transit Times

All Floors over complete duration



Average Transit Time (s) 42.3 (+1.0/-1.5)
Longest Transit Time (s) 98.4 (+19.2/-10.1)



Average Time To Destination (s) 76.5 (+4.3/-4.8)
Longest Time to Destination (s) 194.4 (+22.2/-15.1)